REMARKS/ARGUMENTS

I. Introduction:

Claims 1 and 9-18 are amended and new claims 19-23 are added herein. With entry of this amendment, claims 1-23 will be pending.

II. Claim Rejections – 35 U.S.C. 101:

Claim 9 has been amended to recite a computer-readable medium storing computer-executable instructions, as suggested by the Examiner. Claims 10-16 have been amended to refer to the computer-readable medium.

Claims 9-16, as amended, are believed to comply with the requirements of 35 U.S.C. 101.

III. Claim Rejections -- 35 U.S.C. 102:

Claims 1, 2, 4, 7-10, 12, and 15-18 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,894,481 (Book).

Claims 1, 9, 17, and 18 have been amended to clarify that the desired bandwidth sharing is between Fibre Channel links terminated by the local Fibre Channel ports and specify that transmission of ready indications to the local Fibre Channel ports are delayed based on the desired bandwidth sharing.

Book discloses a fiber channel switch employing distributed queuing. Book uses conventional receiver ready signals that are sent over a link when buffer space is available at a Fibre Channel port. (See, col. 5, lines 39-52 and col. 7, lines 1-14). Book does not transmit locally generated ready indications to local Fibre Channel ports, as set forth in the claims. Instead, Book sends out a receiver ready (RRDY) command from a source port to a remote port, as in conventional Fibre Channel systems. Furthermore, there is no distribution of ready indication signals among local Fibre Channel ports

responsive to a desired bandwidth sharing between Fibre Channel links. As noted at col. 5, lines 20-52 of Book, each source port maintains a separate queue for each destination port. Book overlaps the forwarding of a frame and requesting the next buffer description in a source port queue to provide a high rate of sustained bandwidth between a source port and a destination port. The receiver ready signal is relayed to a remote port when buffer space is released. The receiver ready signal is not distributed locally based on a desired bandwidth sharing.

Moreover, Book does not disclose delaying transmission of ready indications.

Accordingly, claims 1, 9, 17, and 18, and the claims depending therefrom, are submitted as patentable over Book.

Claims 4 and 12 are further submitted as patentable over Book, which does not show or suggest controlling transmission of ready indications to local Fibre Channel ports responsive to availability of buffer space at a remote transport interface. As described at col. 7, lines 1-14, a receiver ready (RRDY) signal is sent when local buffer space is available. Transmittal of the RRDY signal is not dependent on availability at a remote transport interface.

Claims 7 and 15 are further submitted as patentable because Book does not disclose a default equal sharing of bandwidth among local Fibre Channel ports. As previously discussed, Book maintains a separate queue for each source/destination port combination. Frames can be transferred to and from shared memory in response to port controller commands. There is no discussion of a default of an equal sharing of bandwidth among local ports.

With regard to claims 8 and 16, the Examiner has failed to point to any input selecting a desired bandwidth sharing for ports or links in Book.

IV. Claim Rejections -- 35 U.S.C. 103:

Claims 2, 5, 6, 11, 13, and 14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Book in view of U.S. Patent Application Publication No. 2004/0027987 (Bergamasco et al.).

The Bergamasco et al. patent application is directed to credit-based flow control. The apparatus is configured to allow a receiver to provide buffer characteristic information to a sender using an extended receiver ready signal.

The Examiner refers to paragraphs [007] and [008] with regard to the limitations of claims 3 and 11. (Applicants note that the Examiner listed claim 2 in paragraph 8 (page 4) of the Office Action dated July 16, 2007, however, it is believed that the Examiner was actually referring to claim 3). Paragraphs [007] and [008] describe how a plurality of frames are received at a switch from a network node. Credit information associated with the node is modified based on the number of frames forwarded. An extended receiver ready signal including credit information indicating that a plurality of buffers are available to receive transmissions from the node, is sent to the node. In contrast to Bergamasco et al., claim 3 requires receiving a buffer credit from a local Fibre Channel port at a transport interface, modifying the buffer credit value in response to buffer space within the transport interface, and transmitting the modified buffer credit value to a remote Fibre Channel port. Bergamasco et al. do not receive a credit value from a local Fibre Channel port. Instead the credit information is received from a network node. Furthermore, the credit information in Bergamasco et al. is modified based on the number of frames forwarded, rather than buffer space available.

Accordingly, claims 3 and 11 are submitted as patentable over Book and Bergamasco et al.

The Examiner refers to paragraphs [0027] and [0028] with regard to claims 5 and 13. Paragraph [0027] describes how packets are dropped in IP networks that are congested. Paragraph [0028] describes how conventional Fibre Channel uses a buffer-

to-buffer credit mechanism to control traffic between switches. In rejecting claims 5 and 13, the Examiner states:

> "Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to analyze the bandwidth of the network for congestion as taught by Bergamasco et al. and to send this information along on the busy signal in the Fibre channel switch of Book."

The credit mechanism of Bergamasco et al. is used to share information about availability of a port. Even if, for the sake of discussion, the references somehow taught sending network congestion information, this does not teach providing a combined maximum data rate of individual links that exceeds bandwidth available at a transport interface, as required by claims 5 and 13. In conventional systems, such as those disclosed in Book and Bergamasco et al., mapping of transport network capacities to maximum Fibre Channel demands result in unused capacity. Applicant's invention, as set forth in the claims, allow for Fibre Channel oversubscription for large flow control credit grants without requiring large ingress memories or introducing excessive latency into flow control operations.

Accordingly, claims 5 and 13 are submitted as patentable over the cited references.

Claims 6 and 14 are further submitted as patentable over the cited references which do not show or suggest suppressing relaying of ready indications from remote Fibre Channel ports to local Fibre Channel ports. In rejecting claims 6 and 14, the Examiner cites col. 6, lines 1-20 of Book. This section of the patent describes how the source port is preferably responsible for timing a frame until the source port buffer descriptor makes it to the head of the queue and is passed to the destination port. There is no discussion of a ready indication command or signal in this section of the patent. At col. 5, lines 39-52 Book describes how the destination port sends a message to a source port telling the source port to send a receiver ready (RRDY) command. There is

no discussion of suppressing the receiver ready command. Applicants' invention, as set forth in the claims, provides bandwidth savings because there is no need to relay ready indications.

V. Conclusion:

For the foregoing reasons, Applicants believe that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,

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